

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Please amend claims 1, 4, 8, 12, 16-19, 22, 24, 27 and 35, add new claim 49 and replace the pending claims with the following:

1. (Currently amended). A method of inhibiting the infectivity of HIV, said method comprising the steps of:
 - (a) contacting an HIV virion with an antithrombin selected from the group consisting of 43 kDa modified antithrombin, R-antithrombin, S-antithrombin, pre-latent antithrombin, a variant thereof, an analog thereof and a combination thereof ~~a composition comprising a serpin, or a fragment thereof~~; and
 - (b) incubating said virion with said antithrombin ~~serpin, or fragment thereof~~, for a period of time sufficient to inhibit the infectivity of HIV.
- 2-3. (Canceled).
4. (Currently amended). The method of claim 1, wherein said antithrombin ~~serpin~~ is bovine-originated or human-originated.
- 5-7. (Canceled).
8. (Currently amended). A method of decreasing the infectivity of HIV, if any is present, in a biological sample, the method comprising the steps of:
 - (a) identifying a biological sample in which a decrease or elimination of HIV infectivity is desirable; and
 - (b) contacting the biological sample with an amount of an antithrombin selected from the group consisting of 43 kDa modified antithrombin, R-antithrombin, S-antithrombin, pre-latent antithrombin, a variant thereof, an analog thereof and a combination thereof ~~serpin, or fragment thereof~~, sufficient to decrease the infectivity of HIV in the biological sample.
9. (Canceled).

10. (Original) The method of claim 8, wherein said biological sample is selected from a group consisting of blood, plasma, serum, saliva, semen, cervical secretions, urine, breast milk, and amniotic fluids.
11. (Canceled).
12. (Currently amended). The method of claim 8, wherein said antithrombin serpin is bovine-originated or human-originated.
- 13-15. (Canceled).
16. (Currently amended). The method of claim 8, wherein the amount of said antithrombin serpin is at least about 2 units per milliliter of the biological sample volume.
17. (Currently amended) The method of claim 8, wherein the amount of said antithrombin serpin is at least about 5 units per milliliter of the biological sample volume.
18. (Currently amended) The method of claim 8, wherein the amount of said antithrombin serpin is at least about 10 units per milliliter of the biological sample volume.
19. (Currently amended). A method of treating HIV infection, the method comprising introducing into a cell susceptible to HIV infection a DNA molecule encoding an antithrombin a serpin, or fragment thereof, and expressing said antithrombin selected from the group consisting of 43 kDa modified antithrombin, R-antithrombin, S-antithrombin, pre-latent antithrombin, a variant thereof, an analog thereof and a combination thereof serpin, or fragment thereof, and in an amount sufficient to inhibit infection of the cell by the HIV.
- 20-21. (Canceled).

22. (Currently amended). The method of claim 19, wherein said DNA encodes an antithrombin ~~a serpin~~ that is bovine-originated or human-originated.
23. (Canceled).
24. (Currently amended) A method of treating HIV infection in a subject, the method comprising introducing into the subject a producer cell that expresses an antithrombin selected from the group consisting of 43 kDa modified antithrombin, R-antithrombin, S-antithrombin, pre-latent antithrombin, a variant thereof, an analog thereof and a combination thereof ~~a serpin, or fragment thereof~~, in an amount sufficient to inhibit infection of an endogenous cell of the subject, the endogenous cell being susceptible to HIV infection.
- 25-26. (Canceled).
27. (Currently amended) The method of claim 24, wherein said antithrombin ~~serpin~~ is bovine-originated or human-originated.
- 28-34. (Canceled).
35. (Currently amended) A method of inhibiting the infectivity of HIV, said method comprising the steps of:
- (a) contacting an HIV virion with a composition having a surface which comprises an antithrombin selected from the group consisting of 43 kDa modified antithrombin, R-antithrombin, S-antithrombin, pre-latent antithrombin, a variant thereof, an analog thereof and a combination thereof ~~substantially purified serpin, or fragment thereof~~, associated with said surface; and
 - (b) incubating said HIV virion with said antithrombin ~~serpin~~ for a period of time sufficient to inhibit the infectivity of HIV.
- 36-48. (Canceled).

49. (Newly added). A method of inhibiting the infectivity of HIV, said method comprising the steps of:

(a) contacting an HIV virion with antithrombin III bound to heparin; and

(b) incubating said virion with said antithrombin for a period of time sufficient to inhibit the infectivity of HIV.